



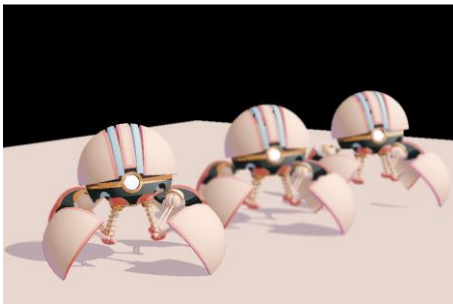
Artineering
Rendering, in Style!

Stylized 3D

Depth of Field

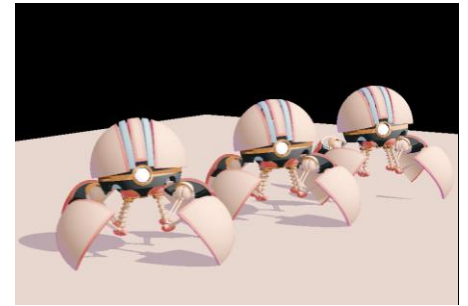
Flair

Flair is a node-based real-time graphics engine developed by Artineering. In Flair it is possible to modify an object's vertices and re-render them in real time with an artist-friendly toolset. This graphics engine can be used as a standalone or as a plugin for applications like Autodesk Maya. Since this work was in collaboration with Artineering then their engine was used in the development process. First four Depth of Field algorithms were implemented in Flair. After that one was chosen for further development, the stylized extension.



Accurate Depth of Field Rendering Using Adaptive Bilateral Depth Filtering

Depth of Field Rendering via Adaptive Recursive Filtering



S.Wu *et al.* and others present a novel Depth of Field algorithm. They use an adaptive bilateral filter which replaces the widely used Gaussian filter.

Final stylized result

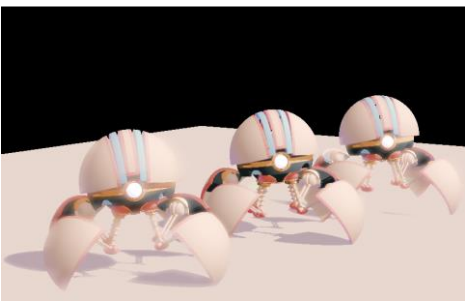


S. Xu *et al.*, present a new post-processing method for the depth of field effect. Their filter uses a weighting function used between two neighbouring pixels producing smoothed results.

L.McIntosh *et al.* and others describe a novel approach to real-time depth of field rendering. Their algorithm takes advantage of separable filtering to simulate bokeh shapes and accounts for intensity leakage.

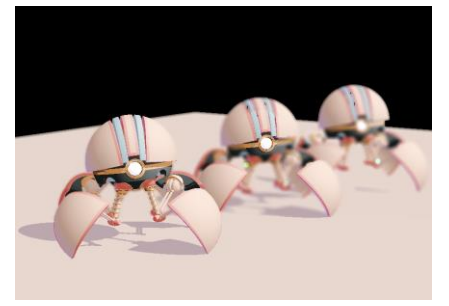
The stylized edition of this work uses a combination of warping, changing colours in the depth of field effect. The warping bends the image to give the viewer a distorted feeling of abstract art. The colour changing is done with a toon shader to make it look more cartoonish.

In his work Kleber Garcia presents a mathematical adaptation and implementation of a separable circular convolution filter. This method is used in games like Madden NFL 17 and Fifa 17.



Efficiently Simulating the Bokeh of Polygonal Apertures in a Post-Process Depth of Field Shader

Circular Separable Convolution Depth of Field



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<https://github.com/siimanderson/DepthofFieldShaders>



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